REMARKS

The Applicants would like to thank the Examiner for the quick and courteous Office Action.

Claims 1-12 and 14-32 are pending in the application.

Claims 1-12 and 14-32 are rejected.

The Examiner helpfully indicated that claims 11 and 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. §112, 2nd paragraph, and to include all of the limitations of the base claim and any intervening claims.

Claims 1, 19 and 27 are amended. It is respectfully submitted that no new matter is added.

Claim 13 is canceled without prejudice to the Applicants' right to present such claim in a continuing application at a later date.

The Applicants appreciate the Examiner's withdrawal of the 35 U.S.C. §112, first paragraph, rejections.

35 U.S.C. §112, First Paragraph, Rejections

The Examiner has rejected claim 27 under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the enablement requirement. The Examiner contends that the claim contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Consider claim 27. While the Examiner finds that the disclosure is enabling for a method in which fluid may be added to transport solids from the closed vessel to the discharge vessel, the disclosure is not enabling for a method in which no fluid other than the fluid in the open vessel is used to transport solids from the closed vessel to the discharge vessel. The applicant discloses a lone method in which fluid from water tank 30 is used to transport solids from the closed vessel to the discharge vessel. It is possible that claim 27 contains a typo, but—as claim 27 is written—the examiner is unable to examine claim 27 in view of the prior art.

In response to the Applicants' arguments, the Examiner notes in section 27 on page 8 of the Action that regarding the 35 U.S.C. 112, first paragraph rejection of claim 27, applicant argues that one skilled in the art would recognize how to perform the method as claimed. This argument is not persuasive. On page 17 of the Remarks, applicant states that "transporting solids from open vessel **2** to closed vessel **8** need not involve water from water tank **30**." The applicant appears to be arguing limitations in claims 21 and 26, not in claim 27 which states "from the closed vessel to the discharge vessel." Furthermore, applicant states on page 17 of the Remarks that "fresh water from tank **30** is only needed for transporting solids from closed vessel **8**." In claim 27, applicant claims "no fluid other than the fluid in the open vessel is used to transport solids from the closed vessel to the discharge vessel." These two statements seem to contradict each other.

The Applicants appreciate the Examiner pointing out this continuing concern. The Applicants respectfully direct the Examiner's attention to the amendments to claim 27 herein. These amendments focus the claim language more on transporting solids from the closed vessel to a discharge vessel. The Applicants respectfully direct the Examiner's attention to the application as filed at page 4, line 27 to page 5, line 6; page 5, lines 15-17; and page 6, lines 8-12, where support for these amendments may be found; thus no new matter is improperly included. The Applicants further respectfully submit that this language distinguishes the claim from claims 21 and 26. Neither claim 21 nor 26 mention a discharge vessel. The Applicants respectfully submit that amended claim 27 now contains subject matter described in the specification in a way to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention, thus overcoming the instant rejection. Reconsideration is respectfully requested.

35 U.S.C. §102(b) Rejection

The Examiner has rejected claims 1-5, 19-21, 26, and 28-31 under 35 U.S.C. §102(b) as allegedly being anticipated by Stinson (Patent No. 2,941,783).

Consider claim 1. The Examiner alleges that Stinson teaches a suction line (17) from a supposed closed vessel (16, 37) to an open vessel (well 4) via drive means (pump 18), a solids feed line (31), and a fluidising apparatus (rotary drill bit 6).

Consider claims 2-5. The Examiner asserts that Stinson teaches a flow chamber (4), means for establishing a swirling or coanda flow (6), and a transport outlet (31) which is external to the flow chamber, situated directly above the flow chamber, and situated close to the flow chamber.

Consider claims 19-20. The Examiner contends that Stinson teaches drawing fluid from the supposedly closed vessel into the open vessel (via lines 17, 23, 24, 7) by means of a pump (18), operating a fluidising unit (rotary drill bit 6), and drawing fluid and fluidised solids from the open vessel into the closed vessel (via line 31).

Consider claim 21. The Examiner alleges that Stinson teaches that fluid (drilling mud 14) is recirculated between the supposed closed vessel (16, 37) and the open vessel (4). Stinson is seen by the Examiner to teach valves 21, 38, 53, 54, 56, and 66 can be closed so that no additional fluid is added to or removed from the system.

Consider claim 26. The Examiner finds that Stinson teaches valves 21, 38, 53, 54, 56, and 66 which can be closed so that no fluid other than the fluid in the open vessel is used to transport solids from the open vessel (4) to the closed vessel (16, 37).

Consider claims 28-31. The Examiner asserts that Stinson teaches a method which is capable of operating below sea level to remove material for transport to shore, capable of removing material from the seabed for dredging or mining, capable of removing radioactive waste solids, and capable of conveying material from the base of a mine shaft to the surface.

In response to the Applicants' arguments, the Examiner finds that the Applicant argues that Stinson does not teach a closed vessel. The Examiner did not find this argument persuasive. The Examiner contends that the word "closed" is defined as “having boundaries” (citing Non-Patent Literature documents).

Absent a frame of reference for the term "closed" in the applicant's claim, the Examiner alleges that Stinson teaches a closed vessel as broadly claimed by the applicant. The Examiner finds that Applicant argues that Stinson's closed vessel does not have a top surface or lid. The Examiner does not find this argument persuasive, alleging that the applicant is arguing limitations not found in the claims.

The Applicants respectfully traverse. A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd.,* 52 F.3d 1043, 1047, 34 U.S.P.Q.2d 1565 (Fed. Cir.), cert. denied, 116 S.Ct. 516 (1995).

The Applicants are surprised that the Examiner maintains that the open-air cuttings pile **37** shown on the ground in FIG. 1 of Stinson is a *closed vessel.* The Examiner cites from Dictionary.com that "closed" means "having boundaries", and that apparently because the flat ground upon which the open-air cuttings pile **37** of Stinson rests is a boundary, the open-air cuttings pile **37** defines a closed vessel. The Applicants respectfully submit that such a definition is opposed to the regular, ordinary meaning of "closed" when one having ordinary skill in the art would consider the terms "open vessel" and "closed vessel". In V. NEUFELDT, ed., *Webster's NEW WORLD™ College Dictionary*, Third Edition, MacMillan, 1997, p. 264, the first definition is "not open; shut", and the second definition is "covered over or enclosed". The Applicants respectfully submit that it is this second, common definition of "closed" which is intended here.

The Applicants respectfully direct the Examiner's attention to the amendments to claims 1 and 19 herein which are made in order to make this distinction clearer. The phrase "where the closed vessel is not open to the atmosphere" has been added in each claims. Support for these amendments is found in the Applicants' specification as originally filed and thus these amendments do not constitute improper insertions of new matter. Please see page 2, lines 25-27 which recites: "The term 'open vessel' is intended to encompass any vessel open to the atmosphere or to any natural open structure which contains fluid, such as a lake

bed or sea bed." Thus, one having ordinary skill in the art would know from this language that a closed vessel is one that is *not* open to the atmosphere. Thus, with these amendments the Applicants respectfully submit that the Applicant is not arguing limitations not found in the claims.

Thus again, the Applicants respectfully note that the Stinson system is to separate cuttings and mud and to reuse the mud during a drilling operation. The rotary bit is used to classify and separate cuttings from mud. The cuttings are dumped into an open pile **37** on the ground for further treatment or disposal.

All of the Applicants' claims herein require and recite apparatus or methods transferring settled and suspended solids from an open vessel into a *closed* vessel. The Examiner contends that Stinson teaches a closed vessel at **16**, **37**. The Applicants again respectfully submit that this is factually incorrect. In Stinson, **16** is a mud container or pit; **37** is a pile. Both are open. While mud container or pit **16** might arguably be called a "vessel" in a very broad sense of the word, it has no top surface or lid. Thus, neither is closed in the ordinary, regular meaning of the word, particularly in the claims as amended.

The Applicants again respectfully submit that pile **37** cannot be called a vessel at all as it is a pile of solid particles or cuttings on the ground. The Examiner's attention is respectfully directed to column 3, lines 7-33 of Stinson. Even by the Examiner's own definition from Dictionary.com, a pile **37** on flat ground cannot constitute "a hollow or concave utensil, as a cup, bowl, pitcher, or vase".

That pit **16** is open at its top is evident from the description that the shale shaker **32** permits the "essential components of the mud, especially including the powdered solid weighting agent, such as barium sulfate, the finer sands, clays, and drill cuttings ... together with the liquid in the drilling mud pass through screen **32** into the body of mud **14** in container **16**". That pit **16** is open is also seen from the Figure where make-up water is added to pit **16** through valve **67** (column 4, lines 12-19) and powdered mineral weighting agent is added thereto via underflow discharge outlet **52** (column 2, lines 57 to column 3, line 4).

The Applicants thus respectfully submit that because Stinson does not disclose each and every limitation of the claims, namely a *closed* vessel in its

normal, ordinary meaning, and particularly as amended herein, the instant rejection should be withdrawn. Reconsideration is respectfully requested.

35 U.S.C. §103(a) Rejection Over Stinson in view of Young, et al.

The Examiner has rejected claims 6-10, 14-17, 22-25, and 32 under 35 U.S.C. 103(a) as allegedly being unpatentable over Stinson (Patent No. 2,941,783) in view of Young, et al. (Patent No. 5,098,667), hereafter referred to as Young.

Consider claims 6 and 7. The Examiner finds Stinson teaches means (valve 22) for controlling the rate at which solids are transferred from the open vessel to the closed vessel, but the Examiner admits that Stinson's means does not comprise a flow meter. The Examiner asserts that Young teaches using a flow meter (58, 56) in conjunction with a valve (78). The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify Stinson's valve with Young's flow meter in order to provide closed-loop feedback control to the valve.

Consider claim 8. The Examiner contends that Stinson teaches a closed vessel (16, 37), but Stinson's closed vessel does not comprise a feed vessel. The Examiner alleges that Young teaches a feed vessel (40) which feeds solids into a transport vessel (20) containing a fluidising unit (stirrer 46). The Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify Stinson's closed vessel with Young's feed vessel, transport vessel, and fluidising unit in order to convey the solids to a discharge vessel.

Consider claim 9. The Examiner admits that Stinson does not teach a transport vessel. The Examiner asserts that Young teaches a transport vessel (20) with a solids outlet (60) through which solids are discharged at a controlled rate along a slurry discharge line (labeled "TO REACTOR" in fig. 1). The Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify Stinson's closed vessel with Young's transport vessel, solids outlet, and slurry discharge line in order to convey the solids to a discharge vessel.

Consider claim 10. The Examiner admits that Stinson does not teach means for measuring the flow rate of slurry discharge. The Examiner asserts that Young teaches means for measuring the flow rate of slurry discharge (58, 56). The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify Stinson's closed vessel with Young's means for measuring flow rate in order to provide closed-loop feedback control to a control valve.

Consider claims 14-17. The Examiner asserts that Stinson teaches means (valve 22) for controlling the flow rate of suspended solids from the open vessel (4) to the closed vessel (16), but admits that it does not teach valves for controlling the flow rate. The Examiner contends that it would have been obvious to a person having ordinary skill in the art to duplicate Stinson's valve, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis paper Co. v. Bemis Co.,* 193 USPQ 8.

The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify Stinson's apparatus with Young's means of controlling flow rate in order to accurately convey a predetermined quantity of solids to a discharge vessel.

The Examiner also admits that Stinson does not teach means for controlling the flow rate based on the flow rate of solids from the transport vessel. The Examiner finds that Young teaches means (valve 16, computer 100, and flow meter 58, 56) for controlling the flow rate of suspended solids from an open vessel (10) to a closed vessel (40, 20) and means (valve 78, computer 100, and flow meter 58, 56) for controlling the flow rate of suspended solids from a transport vessel (20) based on the flow rate of suspended solids from the transport vessel (20) to maintain the solids content at a constant level (see column 5, lines 28-37). The Examiner notes that Young's flow meter 58, 56, in conjunction with gamma density gauge 74 and computer 100, is a mass flow meter as described in column 2, lines 7-12. Thus, the Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify Stinson's apparatus with Young's means of controlling flow rate in order to accurately convey a predetermined quantity of solids to a discharge vessel.

Consider claims 22-24. The Examiner admits that Stinson does not teach controlling the rate of discharge of solids from a closed vessel. Again, the Examiner asserts that Young teaches controlling the rate of discharge of solids from a closed vessel (20) to a discharge vessel (labeled "TO REACTOR" in fig. 1) via a valve (78) so that a desired concentration of solids is discharged at a constant rate (see column 5, lines 28-37). The Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify Stinson's method with Young's step of controlling the rate of discharge of solids in order to accurately convey a predetermined quantity of solids to a discharge vessel.

Consider claim 25. The Examiner admits that Stinson does not teach fluidising the solids in the discharge vessel. The Examiner asserts that Young teaches fluidising the solids in the discharge vessel (via stirrer 46). The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify Stinson's method with Young's step of fluidising the solids in the discharge vessel in order to convey the solids to a discharge vessel.

Consider claim 32. The Examiner admits that Stinson does not teach a method which is capable of conveying material directly into the suction line of a slurry pump. The Examiner contends that Stinson in view of Young teaches a method capable of conveying material directly into the suction line of a slurry pump at concentrations matched to the pump's characteristics (see column 5, lines 28-37). The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify Stinson's method with Young's capability of conveying directly into the suction line of a slurry pump in order to convey the solids to a discharge vessel at a higher elevation.

In response to the Applicants' arguments, the Examiner finds that Applicant argues that Young does not teach a feed vessel. This argument is not persuasive. The Examiner finds that the word "vessel" is defined as "a hollow or concave utensil" (see attached Non-Patent Literature documents). Young teaches a feed vessel as broadly claimed by the applicant, the Examiner contends.

The Examiner finds that Applicant argues that the pumps in the instant application pump water only, and Young's pumps pump slurry. This argument is not persuasive. The applicant is arguing limitations not found in the claims.

Applicant argues that Young's stirrers are not analogous to applicant's flow chambers. This argument is not persuasive. The examiner has not relied upon Young's stirrers for a teaching of applicant's flow chambers.

The Applicants respectfully traverse. The Applicants submit that it is the Examiner's burden to establish a case of *prima facie* obviousness of the pending claims. *In re Oeticker,* 977 F.2d 1443, 1445; 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992), and that as will be established, a *prima facie* case of obviousness has not been made herein. The Applicants appreciate the Examiner's reminders of the factual inquiries set forth in *Graham v. John Deere Co.* cited by the Examiner. However, the Applicants respectfully submit that the differences between the prior art and the amended claims at issue are too great for a conclusion of obviousness.

As established above with respect to the 35 U.S.C. §102(b) rejection, Stinson is deficient in its teachings for more reasons than the Examiner admits, in particular it does not teach or suggest a *closed* vessel as required by the instant claims. Neither open mud container or pit **16** nor open pile **37** therein is a closed vessel. This is particularly true now that independent claims 1 and 19 have been amended and clarified to recite that the closed vessel is not open to the atmosphere. Stinson's mud container or pit **16** and pile **37** are clearly, consistently and only taught as *open* to the atmosphere.

The Applicants further respectfully submit that Stinson does not teach or suggest modifying mud container or pit **16** or pile **37** to be a closed container. Further, the Applicants respectfully submit that Young, et al. does not teach or suggest modifying the mud container or pit **16** or pile **37** of Stinson to be a closed vessel, as required by the original and the amended claims.

Indeed, the Examiner contends that Young, et al. teaches a feed vessel **40**. However, the Applicants respectfully submit that this is incorrect – at least with respect to the ordinary, regular meaning of the word "vessel". In Young, et al. **40**

refers to a conduit means, for instance a pipe, not a vessel. In response the Examiner cites the definition of "vessel" from Dictionary.com of "a hollow or concave utensil, as a cup, bowl, pitcher or vase". The Applicants respectfully submit that none of these examples or definitions encompass a pipe or conduit – or a straw, which would be a shape from the household or kitchen similar to those given, but Dictionary.com does not give such an example or definition. Further, the Applicants respectfully submit that Young, et al. does not teach, hint or suggest modifying their conduit means **40** to be a vessel of any type. Again, the Applicants respectfully submit that interpreting conduit means **40** to be a vessel contradicts the ordinary, regular meaning of this term.

Independent claims 1 and 19 as originally filed and as amended recite an apparatus for transferring settled and suspended solids from an open vessel to a closed vessel. The Examiner contends that Young teaches an open vessel **10**. The Applicants respectfully submit that they do not see how this can be so. The depiction of mud tank or pot **10** in FIG. 1 of Young is that it is *closed* – that is not open to the atmosphere – to use the more specific language of amended claims 1 and 19 herein. Furthermore, there is nothing in the specification which contradicts the understanding from FIG. 1 that the mud tank or pot **10** is *closed*; for instance, please see column 4, lines 1-14. Nor is there any teaching, suggestion or motivation for modifying Young so that the mud tank or pot **10** so that it is open.

The Applicants additionally respectfully submit that there is no teaching or suggestion in either reference to modify the Stinson teachings to involve a closed vessel in place of open mud pit **16** or open pile **37**, as defined in the amended claims, nor would it have been obvious to a person having ordinary skill in the art to modify Stinson's open vessel with Young's feed vessel, transport vessel, and fluidising unit in order to convey the solids to a discharge vessel, since Stinson does not teach or suggest a closed vessel – the mud pit **16** and pile **37** are only disclosed as open.

For all of these reasons the Applicants respectfully submit that the Examiner has not established a *prima facie* rejection of the claims under 35 U.S.C.

§103(a), and thus the instant rejection should be withdrawn. Reconsideration is respectfully requested.

35 U.S.C. §103(a) Rejection Over Stinson in view of Young, et al. and Gomi, et al.

The Examiner rejected claim 18 under 35 U.S.C. 103(a) as allegedly being unpatentable over Stinson (Patent No. 2,941,783) in view of Young (Patent No. 5,098,667) as applied to claim 17 above, and further in view of Gomi, et al. (Patent No. 5,796,012), hereafter referred to as Gomi.

Consider claim 18. The Examiner notes that Stinson in view of Young teaches a flow meter, but admits that this combination does not explicitly state whether the flow meter is a coriolis or ultrasonic meter. The Examiner finds that Gomi teaches a coriolis flow meter. The Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify the flow meter of Stinson in view of Young with Gomi's coriolis flow meter in order to correct instrumental errors caused by a change in density and temperature of the fluid (see Gomi, abstract, lines 1-3).

Once more, the Applicants respectfully traverse. The Applicant submits again that it is the Examiner's burden to establish a case of *prima facie* obviousness of the pending claims. *In re Oeticker, id*, and that as will be established, a *prima facie* case of obviousness has not been made herein.

The Applicants again respectfully note that as established previously, Stinson does not disclose, teach or suggest an apparatus or method of transferring settled and suspended solids from an open vessel to a closed vessel as Stinson does not teach or suggest a closed vessel, nor do Stinson or Young, et al. hint, suggest or teach modifying the open mud container or pit **16** or open pile **37** of Stinson to be a *closed* vessel. This distinction is further made clear by the amendments to independent claims that the closed vessel is not open to the atmosphere. The Applicants further respectfully submit that Gomi, et al. also does not teach, suggest or hint at such a modification.

Further, the supposed closed vessel of Young, et al. **40** is in fact a conduit means, not a vessel – at least not in any ordinary, regular meaning of the term that one having ordinary skill in the art would understand. The Applicants respectfully submit that one having ordinary skill in this art would not confuse a vessel with a pipe. Similarly, such one having ordinary skill in the art would not confuse a closed vessel with the mud pit **16** or pile **37** of Stinson. If such one were to order a closed vessel from a supplier, they would certainly not expect to receive in return a mud pit open to the atmosphere or an open, earthen space for a cuttings pile.

Thus, the Applicants again respectfully submit that a *prima facie* rejection of this claim over the references has not been established and that the rejection should be withdrawn. Reconsideration is respectfully requested.

Request for Entry of Amendment

The Applicants would respectfully request that the instant Amendment be entered under 37 CFR §1.116(b): "Amendments presenting rejected claims in better form for consideration on appeal may be admitted." It is respectfully noted that independent claims 1 and 19 were amended to further define the closed vessel as not open to the atmosphere. Since the Examiner persisted in understanding a pile **17** and a mud pit **16** of Stinson, both of which are *open* to the atmosphere as "closed", these amendments place the claims in better condition for appeal by explicitly defining what a closed vessel is. Further, dependent claim 27 has been amended to clarify its terms and overcome the 35 U.S.C. §112, first paragraph, rejection, which places this claim in better form for consideration on appeal as well. It is respectfully submitted that for all of these reasons, which simplify and narrow the issues, the instant Amendment should be entered.

Further, the Applicants would respectfully submit that the instant amendment be entered under 37 CFR §1.116(c): "If amendments touching the merits of the application or patent under reexamination are presented after final rejection, or after appeal has been taken, or when such amendment might not otherwise be proper, they may be admitted upon showing of good and sufficient reasons why they are necessary and were not earlier presented." The Applicants

submit that the reason why the amendments and arguments above are necessary and were not earlier presented is simply because the Examiner persisted in understanding that the open pile **17** and the open mud pit **16** of Stinson – both of which are open to the atmosphere – were somehow "closed" vessels. That is, the Applicants respectfully submit that the Examiner has taken the position that these open structures of Stinson are closed; an interpretation the opposite of and at odds with the ordinary, regular meanings of the terms "open" and "closed". For the Applicants to have any hope of a chance to fully address the instant rejections, the amendments and arguments herein must be entered and considered.

It is respectfully submitted that the amendments and arguments presented above place the claims in condition for allowance. Reconsideration and allowance of the claims are respectfully requested. The Examiner is respectfully reminded of his continuing duty to indicate allowable subject matter. The Examiner is invited to call the Applicants' attorney at the number below for any reason, especially any reason that may help advance the prosecution.

Respectfully submitted,
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